

Effectiveness of a transfusion protocol to reduce the inappropriate use of red blood cell transfusions in critically ill patients : a before and after study.

RESUME n° 05D0Q

List of authors :

Name	Email	City
Eric THIRY	eric.thiry@chc.be	Liège
Eloïse NATALIS	eloise.natalis@chc.be	Liège
Deeba ALI	deeba.ali88@gmail.com	Liège
Julien GUNTZ	julien.guntz@chc.be	Liège
Philippe DEVOS	philippe.devos@chc.be	Liège
Pierre DEMARET *	demaret.pierre@gmail.com	Liège

* Speaker

Type of presentation: Abstract Submission – Physician

Theme:

- Hematology, oncology, transfusion and coagulation

Date of submission: Monday 23 September 2019 at 11:58 am

Rational :

Red blood cell transfusions (RBCTs) are frequently prescribed in intensive care unit (ICU), but they are an expensive and scarce resource and they are not without risks. Appropriate transfusion strategies are thus required to optimize their use, and interventions aiming to reduce the rate of inappropriate transfusions should be implemented and evaluated.

Patients and Methods or Material and Methods :

Prospective observational before-and-after study conducted in a 32-bed ICU affiliated to a non-university teaching hospital. All RBCTs were prospectively recorded during the 4-month-long phases I and III while a transfusion protocol was implemented in the ICU during the 2-month-long phase II. An RBCT was considered as inappropriate if not prescribed in accordance with the protocol.

Results :

While the number of admissions to ICU was similar between phase I (745 admissions) and phase III (743 admissions), 236 RBCTs were prescribed during phase I versus 191 during phase III, corresponding to a 19%-reduction. We retained 358 RBCTs for analysis (203 during phase I, 155 during phase III). The mean (\pm standard deviation) pre-transfusion hemoglobin (Hb) was 72 ± 10.5 g/L during phase I, indicating restrictive transfusion practices.

Despite this, the proportion of inappropriate RBCTs decreased from 100/203 (49.3%) during phase I to 59/155 (38%) during phase III ($p=0.035$). Admission during phase III was independently associated with a reduced risk of inappropriate RBCT (adjusted OR 0.5, 95% confidence interval 0.3-0.85, $p=0.01$).

Discussion :

Our data indicate that an RBCT protocol may improve transfusion practices. However, in a recent international survey, only 29% of the respondents stated that they had an ICU-specific transfusion protocol in their unit. This simple tool is thus probably underused: our findings could help to increase its adoption. Several limitations of our study have to be acknowledged. It may be difficult to assess the appropriateness of some RBCT and our binary classification is probably not appropriate to reflect the complexity of the decisional process leading to some RBCTs. Furthermore, our study is susceptible to selection bias from secular changes in practice from phase I to phase III, and to the Hawthorne effect, i.e. an initial improvement in performance created by the act of observing the performance. Despite these limitations, our findings support the implementation of protocols to improve transfusion practices in ICU.

Conclusion :

The implementation of an RBCT protocol in our ICU was associated with a 19%-reduction in the number of RBCT prescribed and was independently associated with a 50%-reduction in the risk of being inappropriately transfused.

CONFLICTS OF INTEREST

Conflicts of interest in the last three years, with the following companies :

- Research support/Scientific studies: No
- Consultancy, Expert: No
- Trainings, Teaching: No
- Advertising documents: No
- Invitation to national or international congresses: No
- Stock shareholder: No
- Patent or product inventor: No

COMPLIANCE

Compliance with ethics regulations : Yes